

PATENT
IBM Docket No. FR9-2000-0019

Listing of Claims

1. (Currently Amended) A method for controlling congestion at an output from a node in a data communications network wherein data is transmitted in packets, each packet having a discardability characteristic, said method comprising the steps of:

establishing a set of available, alternative discard strategies for packets having different discardability characteristics;

maintaining a profile of packets recently received at the output, the profile reflecting the discardability characteristics of said packets, wherein the step of maintaining a profile further comprises the steps of maintaining a count of the number of packets actually stored in an output buffer at the output, maintaining counts of the number of said packets which would have been stored in the output buffer if different discard strategies in a set of available discard strategies had been in effect during the receipt of the packets actually stored in the output buffer,

monitoring the output to detect the onset of congestion;

upon detection of congestion, using the profile to select an initial discard strategy; and

initiating the selected initial discard strategy;

continuing to monitor the degree of congestion at the output; and

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selecting and initiating one or more subsequent discard strategies as the degree of congestion changes, wherein each successively initiated discard strategy is intended to result in the discard of fewer packets than the previously initiated discard strategy.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Currently Amended) A method as set forth in claim 5 1 wherein the step of selecting an initial discard strategy further comprises the step of comparing each of said maintained counts to a predetermined threshold and selecting the discard strategy associated with the count closest to but greater than the predetermined threshold.

7. (Original) A method as set forth in claim 6 wherein the step of selecting and initiating one or more subsequent discard strategies further comprises the steps of:

monitoring the count associated with the currently initiated discard strategy; and

selecting a different discard strategy when the monitored count falls below the predetermined threshold.

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8. (Original) A system for controlling congestion at an output buffer in a node in a packet data communications network, said system comprising:

a first counter for maintaining a count n of the number of packets actually stored in the output buffer;

a plurality of additional counters, each additional counter being associated with a different predetermined discard strategy and maintaining a count of the number of packets which would have been stored in the output buffer had the associated discard strategy been in effect during receipt of the last n packets;

discard initiation logic for generating a congestion-detected signal when the count n exceeds a predetermined high threshold;

discard strategy selection logic for selecting and initiating one or more sequential discard strategies as a function of the counts maintained in said plurality of additional counters; and

discard termination logic for terminating discarding of packets when the count n falls below a predetermined low threshold.

9. (Currently Amended) A system for controlling congestion as set forth in claim 8 wherein said discard strategy logic further comprises:

compare logic for comparing the count in each of said additional counters to a predetermined intermediate threshold; and

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selection logic for initially selecting the discard strategy associated with the additional counter having a counter closest to and greater ~~then~~ than the predetermined intermediate threshold.

10. (Currently Amended) A system for controlling congestion as set forth in claim 9 wherein said discard strategy logic further comprises logic for detecting when the count associated with the currently selected discard strategy has fallen below the predetermined intermediate threshold and for selecting a ~~different~~ different discard strategy to be initiated.